

# A Methodological Study of Order Effects in Reporting Relational Aggression Experiences

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## Abstract

Unlike the overt nature of physical aggression, which lends itself to simpler and more direct methods of investigation, the often-masked nature of relational aggression has led to difficulties and debate regarding the most effective tools of study. Given concerns with the accuracy of third-party relational aggression reports, especially as individuals age, self-report measures may be particularly useful when assessing experiences with relational aggression. However, it is important to recognize validity concerns—in particular, the potential effects of item order presentation—associated with self-report of relational aggression perpetration and victimization. To investigate this issue, surveys were administered and completed by 179 young adults randomly assigned to one of four survey conditions reflecting manipulation of item order. Survey conditions included presentation of (a) perpetration items only, (b) victimization items only, (c) perpetration items followed by victimization items, and (d) victimization items followed by perpetration items. Results revealed that participants reported perpetrating relational aggression significantly more often when asked only about perpetration or when asked about perpetration before victimization, compared with

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participants who were asked about victimization before perpetration. Item order manipulation did not result in significant differences in self-reported victimization experiences. Results of this study indicate a need for greater consideration of item order when conducting research using self-report data and the importance of additional investigation into which form of item presentation elicits the most accurate self-report information.

### **Keywords**

bullying, mental health and violence, aggression, relational aggression

Aggressive behaviors, which involve the intent to hurt, harm, or injure others (Dodge, Coie, & Lynam, 2006), have been classified in various ways, including physical versus verbal, direct versus indirect, and hostile versus instrumental (Buss, 1961). In contrast to the overt nature of physical aggression, which lends itself to simpler and more direct methods of investigation, the often-masked nature of relational aggression has led to difficulties and debate regarding the most effective tools to study this phenomenon. As a result, more recent exploration in this area has focused on the methodological validity of the techniques and measures most commonly utilized in relational aggression research (Murray-Close, Ostrov, Nelson, Crick, & Coccaro, 2010; Neal, 2007).

### **Relational Aggression Research**

Despite origins focused heavily on gender differences (Crick & Grotpeter, 1995; Dodge et al., 2006; Ostrov & Keating, 2004), relational aggression research has consistently developed complexity during the last two decades. Specifically, early studies suggested that girls were more likely to favor using relational aggression over physical aggression (Österman et al., 1998) and more likely than boys to utilize relationally aggressive behaviors (Björkqvist, Österman, & Kaukianen, 1992; Crick & Grotpeter, 1995; Henington, Hughes, Cavell, & Thompson, 1998). Attempting to explain gender differences in aggressive behaviors, researchers have posited that these findings reflect differences in testosterone levels among boys and girls, boys' difficulties with behavioral inhibition, and girls' tendencies to be more socially oriented than boys (Campbell, 2006; Crick & Grotpeter, 1995; Maccoby & Jacklin, 1974; Rubin & Barstead, 2014). Furthermore, scholars have noted that girls are less likely than boys to be rewarded for—and more likely to be punished or criticized for—engaging in physical aggression (Archer & Coyne, 2005; Bowie, 2007;

Fagot & Hagan, 1985; Keenan & Shaw, 1997; Vaillancourt & Hymel, 2006). This response disparity might contribute to boys feeling less shy about openly engaging in aggressive behaviors, while driving girls to engage in more covert forms of aggression in an attempt to avoid detection and backlash.

However, several recent meta-analyses have revealed that, across studies, few gender differences in relational aggression emerge (Archer, 2004; Card, Stucky, Sawalani, & Little, 2008; Lansford et al., 2012). Some scholars have hypothesized that age and developmental differences in study samples might explain mixed findings regarding gender and relational aggression (Smith, Rose, & Schwartz-Mette, 2010; Underwood, Beron, & Rosen, 2009). For example, many researchers have found that gender differences in relational aggression, though apparent in childhood, frequently disappear when examining adult samples (Bailey & Ostrov, 2008; Basow, Cahill, Phelan, Longshore, & McGillicuddy-DeLisi, 2007; Burton, Hafetz, & Henninger, 2007; Warren, Richardson, & McQuillin, 2011). Researchers speculate that this developmental shift might reflect boys' tendency to better understand relational aggression as they mature and, therefore, better appreciate the benefits that more covert acts of aggression confer relative to more overt forms of physical aggression (Bailey & Ostrov, 2008; Björkqvist, 1994).

Methodological differences may also explain some of the conflicting results among studies examining relational aggression. For example, studies of relational aggression involving children tend to use teacher-, peer-, and parent-report methods—which often suggest higher levels of relational aggression in girls as compared with boys (Archer, 2004; Card et al., 2008; Tackett & Ostrov, 2010)—whereas studies of older adolescents and adults tend to rely more on self-report methods, which often reveal similar levels of relational aggression among men and women (Archer, 2004; Bailey & Ostrov, 2008; Loflin & Barry, 2016).

## **Assessing Relational Aggression**

As noted above, previous relational aggression studies have typically utilized at least one of three methods to assess this form of behavior: peer-, teacher-, and self-report (Crick, Casas, & Mosher, 1997). The Peer Nomination Scale (Crick & Grotpeter, 1995) is one commonly used peer-report measure that has been adapted to assess physical aggression, relational aggression, and prosocial behavior within many different populations (Archer & Coyne, 2005; Crick et al., 2006; Gentile, Coyne, & Walsh, 2011). Participants completing this scale are asked to select up to three peers who meet characteristics described in each item (e.g., hits, pushes others; starts fights, yells, calls others mean names) and this approach has demonstrated adequate test-retest

reliability, internal consistency, and criterion validity (Crick, 1996; Crick & Bigbee, 1998; Crick et al., 1997). In contrast, teacher reports are often criticized because relational aggression tends to be more apparent and visible to peers than to teachers (Archer & Coyne, 2005; Hadley, 2004; Henington et al., 1998). Furthermore, children may be unlikely to inform teachers of relationally aggressive acts and other forms of bullying that teachers fail to observe (Oliver & Candappa, 2007). However, it is important to note that peer-report methods are not without their limitations in this context, as peers may have trouble accounting for all of an individual's relationally aggressive behaviors, especially when those behaviors take place outside of the environment in which those two individuals interact (Card et al., 2008).

Given concerns about third-party reports, the self-report measure can be particularly useful when assessing individual attitudes and experiences with aggression-related situations (Leff, 2007); it is also the most commonly used method for studying both physical and relational aggression (Hilton, Harris, & Rice, 2003). Although some studies suggest that peer- and teacher-report methods, when used in conjunction, are superior to self-report (Crick et al., 1997), utilizing these data sources may be increasingly difficult—and of questionable validity—as individuals age. Specifically, high school and college students are often in larger classes and do not know many members of the class well; furthermore, college professors often do not know all of the students in their classes personally, nor would they have the ability to observe and rate the relationally aggressive behaviors of each individual. Similarly, although peer and teacher reports provide important information about external perceptions of aggressive behaviors, self-report measures can provide more specific information about individuals' perceptions of their own aggressive behaviors and victimization. Self-report measures of relational aggression may also be better able to assess the more covert, subtle, and complex nature of such behaviors that seem to develop with age (Crick, Casas, & Nelson, 2002). However, few established self-report measures assessing relational aggression exist.

Researchers have often utilized two self-report measures of relational aggression in particular, though there are limitations to each. The self-report version of the Peer Conflict Scale (PCS; Marsee et al., 2011) has been used to assess proactive and reactive overt and covert aggression among high-risk youth and justice-involved youth (Marsee & Frick, 2007); however, very little published research has used the PCS with other populations (Marsee, Lau, & Lapré, 2014). In addition, this measure examines aggression perpetration *only*; it does not include items related to victimization.

The Self-Report of Aggression and Social Behavior Measure (SRASBM; Linder, Crick, & Collins, 2002) is an established self-report instrument that

asks participants how much they agree with statements regarding their perpetration and victimization of physically and relationally aggressive behaviors, with a focus on the underlying reasons for the behaviors (e.g., “When someone hurts my feelings, I intentionally ignore them.”). For each item, participants use a 7-point scale to indicate how truthfully the statement describes their experiences during the past year, ranging from *not at all true* to *very true*. This measure has been utilized often in relational aggression research with college students (Bailey & Ostrov, 2008; Godleski, Ostrov, Houston, & Schlien, 2010; Lento-Zwolinski, 2007), with emphasis on the internal motivations for aggressive acts.

## Bias in Self-Report Method

Because relational aggression is typically difficult to observe, self-report measures can serve as incredibly useful tools for assessing relationally aggressive behaviors. However, it is important to recognize validity concerns associated with self-report data, specifically as it relates to bias. Two general categories of bias may distort the validity of self-report measures: (a) bias and distortion on the part of the subject and (b) bias from wording, format, and order of the measure’s items (Kazdin, 2003).

Social desirability serves as a common example of subject bias that can affect the way a person completes self-report measures (Edwards, 1957). For example, participants who wish to be perceived in a favorable way may underreport their negative behaviors and overreport their positive behaviors (Gregoski, Malone, & Richardson, 2005; Khorramdel, Kubinger, & Uitz, 2014; Roth, Snyder, & Pace, 1986). Such issues are of particular concern when researchers are attempting to elicit accurate reports about behaviors, like aggression, that are typically categorized as undesirable.

Extant research suggests that perspective—for example, whether one identifies with the aggressor or the victim—can also influence an individual’s opinion of an aggressive act (Traclet, Rasclé, Souchon, Coulomb-Cabagno, & Dosseville, 2008). In addition, perpetrators of physical aggression frequently attribute hostile intent to nonaggressive others and see themselves as the victims of a given conflict (Dodge, Bates, & Pettit, 1990; Pierce & Cohen, 1995). Further evidence suggests that such perpetrators may also underestimate the extent of their involvement in aggressive acts (Leff, 2007). Aggressive individuals may even characterize their behavior as a justified response by an oppressed person acting in self-defense or as an appropriate means of retaliation or retribution for past wrongs (Knowles & Condon, 2000; Michel, Pace, Edun, Sawhney, & Thomas, 2014). Such perceptions may affect whether a perpetrator accurately reports his or her behavior as an aggressive act.

In addition to bias originating from participant perspectives, methodological concerns with a selected measure can jeopardize the validity of self-report results. For example, research on measurement construction has indicated that participants use initial items as a context for understanding subsequent items (Knowles & Condon, 2000). As a result, individuals who are asked first about being the *victim* of aggression may succumb to social desirability bias and feel the need to reduce their reported frequency of aggression *perpetration* later in a questionnaire. Similarly, participants who are first asked about aggression perpetration might subsequently increase their reported frequency of aggression victimization in an attempt to justify the perpetration they previously endorsed. Furthermore, the order of item presentation and item grouping in a measure has been shown to affect participants' responses and the psychometric properties of intimate partner aggression measures (Dietz & Jasinski, 2007; Shorey, Woods, & Cornelius, 2016). Specifically, these studies demonstrated that measures with behavior items organized in perpetration-victimization pairs can produce higher reported rates of aggression than measures with a randomized item order or measures with behavior items organized in victimization-perpetration pairs. However, existing research in this area has often focused on the perpetration of aggression between romantic partners and limited measure organization to randomized or matched pairs. Further examination should provide a more robust understanding of the ways in which methodological differences might affect self-reported frequency of relational aggression perpetration and victimization.

## Current Study

Given the value and potential vulnerability of self-report measures in aggression research, this study was designed to examine how a specific type of bias (i.e., item order presentation) might affect self-reports of relational aggression perpetration and victimization. In contrast to previous studies that measured the effects of randomizing or matching items regarding perpetration and victimization of a specific aggressive act, the current study attempted to investigate whether varied presentation of item sets (i.e., all questions about perpetration vs. all questions about victimization) affects self-reported frequency of relational aggression perpetration and victimization.

Based on existing understanding of social desirability biases and the previously observed effects of adjusting perpetration-victimization items within measures of intimate partner aggression, we hypothesized that there would be a main effect of item order (i.e., whether questions about victimization preceded questions about perpetration or vice versa) on self-reported rates of relational aggression perpetration. Specifically, we anticipated that

participants would report lower rates of perpetrating relationally aggressive acts when they were asked first about their experiences as a victim of relational aggression than when they were asked first, or only, about their experiences as a perpetrator. In addition, given that studies have not typically focused on reporting rates of *victimization* experiences, we wanted to explore whether differences in reported rates of victimization would appear depending on item order (i.e., being asked first about perpetrating relationally aggressive acts compared with being asked first, or only, about experiences as a victim).

## Method

### *Participants*

Data were collected from 188 undergraduate students attending a large, urban, private, mid-Atlantic university. Eligible students were 18 to 25 years of age and enrolled in at least one undergraduate psychology class; however, students were excluded if they were enrolled exclusively in online classes. Nine potential participants were excluded based on these preset inclusion/exclusion criteria (five did not meet the age criterion, three were online-only students, and one did not meet the age criterion and was an online-only student). Of the remaining 179 participants (65% female), ages ranged from 18 to 25 years ( $M = 20.1$ ,  $SD = 1.7$ ). This sample included an overrepresentation of women relative to their 49% prevalence in the broader university population. This discrepancy reflects the overrepresentation of women pursuing education in psychology (e.g., Willyard, 2011). Race and ethnicity data were not collected in the current study; however, multiple studies utilizing the same recruitment methods at the same university resulted in samples with fairly consistent racial/ethnic identifications (i.e., 65%-75% Caucasian, 15%-18% Asian/Asian American, 5%-7% Black/African American, 4%-9% Other, approximately 0.5% Native Hawaiian/Pacific Islander, and approximately 0.5% American Indian and Alaskan Native; with 4%-5% of participants identifying as Hispanic or Latino; see, for example, Foster, 2012).

### *Measures*

Measures included (a) the SRASBM (Linder et al., 2002), (b) one of four versions of the Relational Aggression Experience Questionnaire (RAEQ), and (c) a demographics questionnaire, which asked participants about their age, year in college, current living situation, and involvement in university activities.

The SRASBM (Linder et al., 2002) was used to assess perpetration and victimization of relational aggression (e.g., “When I have been angry at or jealous of someone, I have tried to damage that person’s reputation by gossiping about him/her or by passing on negative information about them to other people”), perpetration and victimization of physical aggression (e.g., “When I have been provoked by something a person has said or done, I have retaliated by threatening to physically harm that person”), prosocial behavior (e.g., “I try to make sure that other people get invited to participate in group activities”), and exclusivity (e.g., “It bothers me if a friend wants to spend time with his/her other friends, instead of just being alone with me”). A 7-point scale, ranging from *not at all* to *very true*, accompanies each item. Higher scores indicate higher levels of aggression, prosocial behavior, or exclusivity. Internal consistency values obtained from a previous study using a university population were as follows: reactive relational aggression ( $\alpha = .73$ ), reactive physical aggression ( $\alpha = .85$ ), prosocial behavior ( $\alpha = .78$ ), and exclusivity ( $\alpha = .58$ ; Lento-Zwolinski, 2007). This established instrument was included in the study for use in evaluating the RAEQ’s convergent validity.

The RAEQ is a self-report measure developed for this study after thorough review of the available self-report measures of aggression. Existing measures, including the PCS and the SRASBM, do not gather information regarding frequency of aggressive behavior perpetration and victimization. Thus, the RAEQ was designed specifically to gather self-reported frequency of relational aggression perpetration and victimization. The measure utilizes similar examples of relationally aggressive behavior as the SRASBM but asks about frequency of perpetration and victimization of those behaviors (e.g., “In the past week how many times did you say something mean about someone to another person?”).

There are four versions of the RAEQ: (a) a perpetrator-only version (RAEQ: P), (b) a victim-only version (RAEQ: V), (c) a perpetrator–victim version (RAEQ: P-V), and (d) a victim–perpetrator version (RAEQ: V-P). The RAEQ: P asks about the relationally aggressive behaviors that a participant has perpetrated (i.e., types, frequencies) in the past week, while the RAEQ: V asks about the relationally aggressive behaviors that the participant has experienced as a victim in the past week. Each of these questionnaires includes 12 items. The RAEQ: P-V and RAEQ: V-P ask the same questions as the aforementioned versions; however, they ask for information about both the perpetration and victimization of relational aggression, differing only in the order of the questions. The RAEQ: P-V asks, first, about experiences as a perpetrator, followed by questions about experiences as a victim; the RAEQ: V-P asks, first, about experiences as a victim, followed by questions about

**Table 1.** Age and Gender Breakdown by Condition.

Survey Version	Female (%)	Average Age (SD)
Victimization only ( $N = 45$ )	28 (62.2)	20.00 (1.51)
Perpetration only ( $N = 45$ )	35 (77.8)	20.00 (1.43)
Victim–perpetrator ( $N = 45$ )	29 (64.4)	20.00 (1.99)
Perpetrator–victim ( $N = 44$ )	27 (61.4)	20.39 (1.88)

Note. Results of a chi-square test did not demonstrate a significant gender difference among groups,  $\chi^2 = 3.54$ ,  $p = .32$ ,  $V = .14$ .

experiences as a perpetrator. Given that these versions of the survey combine the perpetrator-only and victim-only versions, they each contain 24 items.

Total perpetration scores were calculated by summing participants' frequency estimates for each individual behavior over the previous week; total victimization scores were calculated similarly using frequency estimates for victimization experiences. In the current study, total perpetration and victimization scores on the RAEQ correlated significantly with victim and perpetrator composite scores on the SRASBM, perpetration,  $r(132) = .26$ ,  $p = .003$ ; victimization,  $r(132) = .30$ ,  $p < .001$ , suggesting that the RAEQ demonstrates convergent validity with an existing measure of relational aggression.

## Procedure

The project coordinator described the study to students in undergraduate psychology classes. Flyers describing the study were disseminated to students in random order, each containing a link to one of four online survey forms, thereby randomly assigning participants to condition. Forty-four participants completed the RAEQ: P-V condition, and 45 participants completed each of the other three conditions. See Table 1 for an age and gender break down of the participants in each condition. The online research system allowed each student to sign up for the study only once. The online surveys required approximately 45 min to complete and included information about the study, consent to participate in the study, one of the four versions of the RAEQ, the SRASBM, and the demographics questionnaire. To maintain the accuracy of presentation order on the RAEQ, the surveys were designed so that participants could not scroll forward to see the upcoming questions or backward to see previous questions and answers. Students received extra credit for their participation in the study; students who did not wish to participate in such research were allowed to complete an alternative extra credit assignment. This study was approved by the university's institutional review board.

## Results

Descriptive data were generated for frequency of relational aggression by demographic characteristics, including gender, age, and college year. Analyses of mean differences (i.e., independent samples *t* tests and one-way ANOVA) were conducted to examine differences in reported frequencies of relational aggression perpetration and victimization by each of these characteristics; however, no significant differences were observed for perpetration, gender,  $t(132) = -.41, p = .68, d = .08, 95\%$  confidence interval (CI) of effect size =  $[-.00, .42]$ ; age,  $F(7, 126) = .82, p = .57, \text{partial } \eta^2 = .04, 95\%$  CI =  $[-.00, .08]$ ; year in school,  $F(4, 129) = .81, p = .52, \text{partial } \eta^2 = .02, 95\%$  CI =  $[-.00, .07]$ , or victimization, gender,  $t(132) = -1.08, p = .28, d = .19, 95\%$  CI =  $[-.00, .53]$ ; age,  $F(7, 126) = .33, p = .94, \text{partial } \eta^2 = .02, 95\%$  CI =  $[-.00, .03]$ ; year in school,  $F(4, 129) = 1.19, p = .32, \text{partial } \eta^2 = .04, 95\%$  CI =  $[-.00, .09]$ .

Participants' responses indicated that certain relationally aggressive behaviors occur more frequently than others in terms of both reported perpetration and victimization. For example, students reported that the most frequent relationally aggressive behaviors perpetrated included the following: saying something mean about someone to another person, eye rolling, saying something mean directly to someone, and calling someone names. In terms of victimization, participants reported experiencing the following behaviors as victims most frequently: eye rolling, dirty looks, having someone say something mean to you, and having someone say something mean about you to another person. Students reported that getting someone in trouble in class, spreading rumors, posting mean things about a person online, and threatening to do something mean to someone were perpetrated least frequently and experienced as a victim least frequently. See Table 2 for means and standard deviations of all reported frequencies of relationally aggressive behaviors.

Paired sample *t* tests were used to compare the total perpetration and victimization frequencies within the past week for those participants presented with both sets of questions. Statistically significant differences were not observed between total reported perpetration ( $M = 12.46, SD = 12.52$ ) and total reported victimization ( $M = 10.99, SD = 22.25$ ) frequencies,  $t(88) = .62, p = .54, d = .08, 95\%$  CI =  $[-2.72, 2.56]$ .

A one-way, between-groups ANOVA with three levels (perpetrator-only, victim–perpetrator, perpetrator–victim) was used to evaluate whether order of item presentation affected reports of perpetrating relational aggression, and a significant main effect was observed,  $F(2, 131) = 4.48, p = .01, \text{partial } \eta^2 = .06, 95\%$  CI =  $[-.00, .15]$ . Tukey's honestly significant difference (HSD) post hoc comparisons of the three groups revealed findings that supported the expected relationship; participants reported perpetrating relational

**Table 2.** Mean Frequency of Relationally Aggressive Act by Role.

Type	Victim	Perpetrator
	M (SD)	M (SD)
Saying something mean	1.47 (2.65)	2.04 (3.70)
Saying something mean about you/someone to another person	1.45 (3.18)	2.91 (3.24)
Posting something mean online about someone	0.13 (0.69)	0.25 (1.26)
Threatening to do something mean	0.21 (0.76)	0.35 (1.46)
Giving a dirty look	1.62 (2.55)	1.90 (2.83)
Getting someone in trouble in class	0.03 (0.27)	0.01 (0.09)
Eye rolling	1.65 (2.18)	2.19 (3.22)
Name calling	1.37 (3.53)	2.03 (4.32)
Spreading rumors	0.38 (2.44)	0.12 (0.44)
Texting mean things about you/someone to person	0.78 (2.64)	1.20 (1.99)
Excluding you/someone	0.90 (2.40)	0.42 (0.91)
Giving the silent treatment	0.77 (2.73)	0.51 (0.94)

aggression significantly more often when asked only about perpetration (MD = 7.96, SE = 2.94,  $p = .02$ ,  $d = .59$ , 95% CI = [0.16, 1.01]) or when asked about perpetration before victimization (MD = 7.27, SE = 2.96,  $p = .04$ ,  $d = .60$ , 95% CI = [0.17, 1.02]) than when asked about victimization before perpetration. No significant differences were observed in reports between participants in the perpetration-only or perpetration-first conditions (MD = .69, SE = 2.96,  $p = .97$ ,  $d = .04$ , 95% CI = [-.37, .46]).

Contrary to our secondary hypothesis regarding victimization, a one-way, between-groups ANOVA with three levels (victim-only, victim–perpetrator, perpetrator–victim) failed to support the effect of item presentation order on reported frequency of relational aggression victimization,  $F(2, 131) = .51$ ,  $p = .60$ , partial  $\eta^2 = .01$ , 95% CI = [.00, .05]. See Table 3 for means and standard deviations of reported rates of perpetration and victimization by RAEQ version.

It is important to note that the statistical analyses did not meet typical power conventions (i.e.,  $1 - \beta = .80$ ); however, post hoc power analyses revealed that, given observed effect sizes, meeting this standard would have required sample sizes ranging from 295 to 6,296 participants. As a result, although the probability of Type II error was elevated, it is unlikely that non-significant findings are solely attributable to a limited sample size; thus, both statistical significance and effect sizes are emphasized when interpreting and contextualizing results.

**Table 3.** Reported Rates of Relational Aggression by Condition.

Item Order	Victimizing	Perpetrating
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Victimization only	10.27 (15.57)	—
Perpetration only	—	16.82 (17.13)
Victim–perpetrator	8.89 (12.17)	8.87 (8.42)
Perpetrator–victim	13.14 (29.20)	16.14 (14.86)

## Discussion

Results of the current study revealed several findings that may affect the assessment and understanding of relational aggression among young adults. Most importantly, results support the primary hypothesis—order of item presentation affected reported frequency of relational aggression perpetration. Specifically, we expected that social desirability factors—which often lead individuals to underreport negative behaviors—would reduce participants’ willingness to report having perpetrated relational aggression when sensitized to the negativity of the behavior by first answering questions about personal relational aggression victimization.

Alignment of participants’ responses with this hypothesis indicates a need for researchers to consider item order when collecting self-reported relational aggression perpetration data. If participants more accurately estimate the frequency with which they perpetrate relationally aggressive behaviors when they are *not* first asked about victimization, it may be that questions about perpetration should always come before questions about victimization (Gregoski et al., 2005). However, additional investigation into the accuracy of perpetration-first reports—perhaps combining this retrospective self-report methodology with momentary assessment (i.e., real-time electronic reporting) or peer-report methods—would likely indicate whether such a strategy is appropriate. If additional investigation suggests that reported frequencies of perpetration are *not* more accurate when asked about perpetration before victimization, perhaps relational aggression measures should intersperse questions about perpetration and victimization, as has been suggested for measures of physical aggression (Vega & O’Leary, 2006). Future research should examine both accuracy and consistency of reports when items are grouped and ordered by perpetration and victimization and when perpetration and victimization questions are interspersed.

Overall, participants may have been more willing to report relational aggression perpetration during the current study because they did so via an

anonymous survey, completed independently and remotely on their own computers. Empirical findings have shown that anonymity can significantly enhance willingness to report socially undesirable behaviors, including reports of physical aggression perpetration (Vega & O'Leary, 2006). Researchers hoping to collect information on behaviors that could be perceived as socially damaging or embarrassing should consider utilizing similar strategies to encourage honest reporting.

In contrast to the findings about perpetration rates, results of the current study did not support the hypothesis that participants would report higher *victimization* rates when first asked about relational aggression perpetration. In addition to the potential for Type II error, several possible explanations may be offered for these findings. First, given the often covert nature of relational aggression, individuals may have struggled to identify times when they were victims of relational aggression, especially for those behaviors that they would likely have failed to witness (e.g., being the subject of a conversation between two others). Second, it may be that social desirability factors influenced participants' self-enhancement—underreporting relational aggression victimization might foster perceptions of likeability among friends and acquaintances (Alicke & Sedikides, 2009). Third, avoidance of reporting relationally aggressive victimization experiences may be self-protective, as focusing on such victimization might make an individual feel weak and vulnerable.

Beyond the findings related to order effects in reporting of relational aggression perpetration and victimization, this study revealed no significant gender- or age-related differences in reported rates of relational aggression—whether as a perpetrator or victim. This finding seems to conflict with some extant research reporting differences in rates of relational aggression by these demographic characteristics, especially gender (Crick & Grotpeter, 1995; Dodge et al., 2006; Ostrov & Keating, 2004). However, these results are consistent with more recent research that calls into question whether gender differences in relational aggression perpetration truly exist (Card et al., 2008; Crick, Ostrov, & Kawabata, 2007; Smith et al., 2010).

### *Limitations and Future Research*

This study was designed to examine methodological issues that might arise when assessing self-reported rates of relational aggression perpetration and victimization. Because this study relied on self-report data, frequency-related results may not reflect participants' true experiences—whether because of social desirability and other biases affecting reporting, or because of the covert nature of relational aggression. In addition, the primary measures used in this study were designed specifically for this project and, therefore, its

psychometric properties were not previously established. However, the results of the current study serve to provide support for the RAEQ's convergent validity with the SRASBM, an established, normed, self-report measure of relational aggression. In addition, the overrepresentation of female participants in our sample compared with the university population may have limited our ability to detect genuine gender differences in relational aggression; however, prior studies with a largely female sample were still able to observe gender differences in intimate partner aggression (e.g., Shorey et al., 2016), suggesting that disproportionality alone might not wholly explain this lack of finding. Similarly, limiting our sample to students enrolled in psychology classes might also affect the generalizability of our findings; as a result, future research should work to conduct similar studies with a more diverse group of college-age individuals. Finally, although many of our analyses were underpowered, we still observed a significant effect of item order in reporting of relational aggression perpetration, with medium effect sizes, suggesting that this connection should be further examined.

In addition to addressing the limitations described above, future studies in this area might examine whether individuals' reported rates of perpetration are more *accurate* depending on the order of item presentation. Such evaluations might supplement retrospective self-report data with ecological momentary assessments to further inform consideration of the appropriate order in which to ask individuals about their relational aggression experiences. In addition, if any structural changes are made to self-report measures to reduce item order effects, researchers should evaluate the impact of these alterations. Within the context of previous empirical findings, we proposed several explanations for the observed order effects. In the future, researchers should examine these potential explanations by collecting social desirability bias and self-protection tendency data along with data on order effects and accuracy of retrospective self-reports of relational aggression perpetration and victimization.

## **Conclusion**

Results of the current study indicated that item order presentation can influence self-reported rates of relational aggression perpetration and victimization, suggesting a methodological issue that should be considered when developing and utilizing these types of measures. Researchers should consider these effects when interpreting results, even with established measures. In addition, future studies should continue to examine the effects of item order, and might attempt to corroborate the accuracy of such reports, to determine the most appropriate manner in which to collect information regarding relationally aggressive experiences.

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## References

- Alicke, M., & Sedikides, C. (2009). Self-enhancement and self-protection: What they are and what they do. *European Review of Social Psychology, 20*(1), 1-48. doi:10.1080/10463280802613866
- Archer, J. (2004). Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology, 8*, 291-322. doi:10.1037/1089-2680.8.4.291
- Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review, 9*, 212-230. doi:10.1207/s15327957pspr0903\_2
- Bailey, C. A., & Ostrov, J. M. (2008). Differentiating forms and functions of aggression in emerging adults: Associations with hostile attribution biases and normative beliefs. *Journal of Youth and Adolescence, 37*, 713-722. doi:10.1007/s10964-007-9211-5
- Basow, S. A., Cahill, K. F., Phelan, J. E., Longshore, K., & McGillicuddy-DeLisi, A. (2007). Perceptions of relational and physical aggression among college students: Effects of gender of perpetrator, target, and perceiver. *Psychology of Women Quarterly, 31*, 85-95. doi:10.1111/j.1471-6402.2007.00333.x
- Björkqvist, K. (1994). Sex differences in physical, verbal, and indirect aggression: A review of recent research. *Sex Roles, 30*, 177-188. doi:10.1007/BF01420988
- Björkqvist, K., Österman, K., & Kaukianen, A. (1992). The development of direct and indirect aggressive strategies in males and females. In K. Björkqvist & P. Niemelä (Eds.), *Of mice and women: Aspects of female aggression* (pp. 51-64). San Diego, CA: Academic Press.

- Bowie, B. H. (2007). Relational aggression, gender, and the developmental process. *Journal of Child and Adolescent Psychiatric Nursing, 20*, 107-115. doi:10.1111/j.1744-6171.2007.00092.x
- Burton, L. A., Hafetz, J., & Henninger, D. (2007). Gender differences in relational and physical aggression. *Social Behavior and Personality: An International Journal, 35*, 41-50. doi:10.2224/sbp.2007.35.1.41
- Buss, A. H. (1961). *The psychology of aggression*. New York, NY: John Wiley. doi:10.1037/11160-000
- Campbell, A. (2006). Sex differences in direct aggression: What are the psychological mediators? *Aggression and Violent Behavior, 11*, 237-264. doi:10.1016/j.avb.2005.09.002
- Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development, 79*, 1185-1229. doi:10.1111/j.1467-8624.2008.01184.x
- Crick, N. R. (1996). The role of physical aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development, 67*, 2317-2327. doi:10.1111/j.1467-8624.1996.tb01859.x
- Crick, N. R., & Bigbee, M. A. (1998). Relational and overt forms of peer victimization: A multi-informant approach. *Journal of Consulting and Clinical Psychology, 66*, 337-347. doi:10.1037/0022-006X.66.2.337
- Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology, 33*, 579-588. doi:10.1037/0012-1649.33.4.579
- Crick, N. R., Casas, J. F., & Nelson, D. A. (2002). Toward a more comprehensive understanding of peer maltreatment: Studies of relational victimization. *Current Directions in Psychological Science, 11*, 98-101. doi:10.1111/1467-8721.00177
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66*, 710-722. doi:10.1111/j.1467-8624.1995.tb00900.x
- Crick, N. R., Ostrov, J. M., Burr, J. E., Cullerton-Sen, C., Jansen-Yeh, E., & Ralston, P. (2006). A longitudinal study of relational and physical aggression in preschool. *Journal of Applied Developmental Psychology, 27*, 254-268. doi:10.1016/j.appdev.2006.02.006
- Crick, N. R., Ostrov, J. M., & Kawabata, Y. (2007). Relational aggression and gender: An overview. In D. J. Flannery, A. T. Vazsonyi, & I. D. Waldman (Eds.), *The Cambridge handbook of violent behavior* (pp. 245-259). New York, NY: Cambridge University Press.
- Dietz, T. L., & Jasinski, J. L. (2007). The effect of item order on partner violence reporting: An examination of four versions of the revised Conflict Tactics Scales. *Social Science Research, 36*, 353-373. doi:10.1016/j.ssresearch.2006.04.006
- Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science, 250*, 1678-1683. doi:10.1126/science.2270481
- Dodge, K. A., Coie, J. D., & Lynam, D. (2006). Aggression and antisocial behavior in youth. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child*

- psychology: *Social, emotional, and personality development* (Vol. 3, 6th ed., pp. 719-788). Hoboken, NJ: John Wiley.
- Edwards, A. L. (1957). *The social desirability variable in personality assessment and research*. Fort Worth, TX: Dryden Press.
- Fagot, B. I., & Hagan, R. (1985). Aggression in toddlers: Responses to the assertive acts of boys and girls. *Sex Roles, 12*, 341-351. doi:10.1007/BF00287600
- Foster, E. E. (2012). *An examination of the impeachment and rehabilitation of a character witness's testimony*. Dissertation, Drexel University, Philadelphia, PA.
- Gentile, D. A., Coyne, S., & Walsh, D. A. (2011). Media violence, physical aggression, and relational aggression in school age children: A short-term longitudinal study. *Aggressive Behavior, 37*, 193-206. doi:10.1002/ab.20380
- Godleski, S. A., Ostrov, J. M., Houston, R. J., & Schlienzy, N. J. (2010). Hostile attribution biases for relationally provocative situations and event-related potentials. *International Journal of Psychophysiology, 76*, 25-33. doi:10.1016/j.ijpsycho.2010.01.010
- Gregoski, M., Malone, W. A., & Richardson, D. S. (2005). Measuring direct and indirect aggression: Is there a response bias? *Psychological Reports, 97*, 563-566. doi:10.2466/pr0.97.2.563-566
- Hadley, M. (2004). Relational, indirect, adaptive, or just mean: Recent studies on aggression in adolescent girls—Part II. *Studies in Gender and Sexuality, 5*, 331-350. doi:10.1080/15240650509349254
- Henington, C., Hughes, J. N., Cavell, T. A., & Thompson, B. (1998). The role of relational aggression in identifying aggressive boys and girls. *Journal of School Psychology, 36*, 457-477. doi:10.1016/S0022-4405(98)00015-6
- Hilton, N. Z., Harris, G. T., & Rice, M. E. (2003). Correspondence between self-report measures of interpersonal aggression. *Journal of Interpersonal Violence, 18*, 223-239. doi:10.1177/0886260502250065
- Kazdin, A. E. (2003). *Research design in clinical psychology* (4th ed.). Boston, MA: Allyn & Bacon.
- Keenan, K., & Shaw, D. (1997). Developmental and social influences on young girls' early problem behavior. *Psychological Bulletin, 121*, 95-113. doi:10.1037/0033-2909.121.1.95
- Khorrarnadel, L., Kubinger, K. D., & Uitz, A. (2014). The influence of item order on intentional response distortion in the assessment of high potentials: Assessing pilot applicants. *International Journal of Psychology, 49*, 131-139. doi:10.1002/ijop.12015
- Knowles, E. S., & Condon, C. A. (2000). Does the rose still smell as sweet? Item variability across test forms and revisions. *Psychological Assessment, 12*, 245-252. doi:10.1037/1040-3590.12.3.245
- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., . . . Chang, L. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior, 38*, 298-308. doi:10.1002/ab.21433
- Leff, S. S. (2007). Bullying and peer victimization at school: Considerations and future directions. *School Psychology Review, 36*, 406-412.

- Lento-Zwolinski, J. (2007). College students' self-report of psychosocial factors in reactive forms of relational and physical aggression. *Journal of Social and Personal Relationships, 24*, 407-421. doi:10.1177/0265407507077229
- Linder, J. R., Crick, N. R., & Collins, W. A. (2002). Relational aggression and victimization in young adults' romantic relationships: Associations with perceptions of parent, peer, and romantic relationship quality. *Social Development, 11*, 71-86. doi:10.1111/1467-9507.00187
- Loflin, D. C., & Barry, C. T. (2016). "You can't sit with us": Gender and the differential roles of social intelligence and peer status in adolescent relational aggression. *Personality and Individual Differences, 91*, 22-26. doi:10.1016/j.paid.2015.11.048
- Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences*. Stanford, CA: Stanford University Press.
- Marsee, M. A., Barry, C. T., Childs, K. K., Frick, P. J., Kimonis, E. R., Muñoz, L., . . . Lau, K. S. L. (2011). Assessing the forms and functions of aggression using self-report: Factor structure and invariance of the Peer Conflict Scale in youths. *Psychological Assessment, 23*, 792-804. doi:10.1037/a0023369
- Marsee, M. A., & Frick, P. J. (2007). Exploring the cognitive and emotional correlates to proactive and reactive aggression in a sample of detained girls. *Journal of Abnormal Child Psychology, 35*, 969-981. doi:10.1007/s10802-007-9147-y
- Marsee, M. A., Lau, K. S. L., & Lapré, G. E. (2014). Parent and adolescent report of the forms and functions of aggression: Associations with delinquency, CU traits, and dysregulation. *Child Youth Care Forum, 43*, 27-39. doi:10.1007/s10566-013-9223-0
- Michel, J. S., Pace, V. L., Edun, A., Sawhney, E., & Thomas, J. (2014). Development and validation of an explicit aggressive beliefs and attitudes scale. *Journal of Personality Assessment, 96*, 327-338. doi:10.1080/00223891.2013.832260
- Murray-Close, D., Ostrov, J. M., Nelson, D. A., Crick, N. R., & Coccaro, E. F. (2010). Proactive, reactive, and romantic relational aggression in adulthood: Measurement, predictive validity, gender differences, and association with Intermittent Explosive Disorder. *Journal of Psychiatric Research, 44*, 393-404. doi:10.1016/j.jpsychires.2009.09.005
- Neal, J. W. (2007). Why social networks matter: A structural approach to the study of relational aggression in middle childhood and adolescence. *Child Youth Care Forum, 36*, 195-211. doi:10.1007/s10566-007-9042-2
- Oliver, C., & Candappa, M. (2007). Bullying and the politics of "telling." *Oxford Review of Education, 33*, 71-86. doi:10.1080/03054980601094594
- Österman, K., Björkqvist, K., Lagerspetz, K. M., Kaukiainen, A., Landau, S. F., Frańczek, A., & Caprara, G. V. (1998). Cross-cultural evidence of female indirect aggression. *Aggressive Behavior, 24*(1), 1-8.
- Ostrov, J. M., & Keating, C. (2004). Gender differences in preschool aggression during free play and structured interactions: An observational study. *Social Development, 13*, 255-277.
- Pierce, K. A., & Cohen, R. (1995). Aggressors and their victims: Towards a contextual framework for understanding children's aggressor-victim relationships. *Developmental Review, 15*, 292-310. doi:10.1006/drev.1995.1011

- Roth, D. L., Snyder, C. R., & Pace, L. M. (1986). Dimensions of favorable self-presentation. *Journal of Personality & Social Psychology, 51*, 867-874. doi:10.1037/0022-3514.51.4.867
- Rubin, K.H., & Barstead, M.G. (2014). Gender differences in child and adolescent social withdrawal: A commentary. *Sex Roles, 70*, 274-284. doi: 10.1007/s11199-014-0357-9
- Shorey, R. C., Woods, W. C., & Cornelius, T. L. (2016). The effect of item order on psychological aggression reporting: An examination with the multidimensional measure of emotional abuse. *Partner Abuse, 7*, 125-139. doi:10.1891/1946-6560.7.2.125
- Smith, R. L., Rose, A. J., & Schwartz-Mette, R. A. (2010). Relational and overt aggression in childhood and adolescence: Clarifying mean-level gender differences and associations with peer acceptance. *Social Development, 19*, 243-269.
- Tackett, J. L., & Ostrov, J. M. (2010). Measuring relational aggression in middle childhood in a multi-informant multi-method study. *Journal of Psychopathology and Behavioral Assessment, 32*, 490-500. doi:10.1007/s10862-010-9184-7
- Tractel, A., Rasclé, O., Souchon, N., Coulomb-Cabagno, G., & Dosseville, F. (2008). Aggressor and victim perspective-related differences in perceived legitimacy of aggression in soccer. *Perceptual & Motor Skills, 106*, 234-240. doi:10.2466/pms.106.1.234-240
- Underwood, M. K., Beron, K. J., & Rosen, L. H. (2009). Continuity and change in social and physical aggression from middle childhood through early adolescence. *Aggressive Behavior, 35*, 357-375. doi:10.1002/ab.20313
- Vaillancourt, T., & Hymel, S. (2006). Aggression and social status: The moderating roles of sex and peer-valued characteristics. *Aggressive Behavior, 32*, 396-408. doi:10.1002/ab.20138
- Vega, E. M., & O'Leary, D. (2006). Reaction time and item presentation factors in the self-report of partner aggression. *Violence and Victims, 21*, 519-533. doi:10.1891/0886-6708.21.4.519
- Warren, P., Richardson, D. S., & McQuillin, S. (2011). Distinguishing among non-direct forms of aggression. *Aggressive Behavior, 37*, 291-301. doi:10.1002/ab.20394
- Willyard, C. (2011, January). Men: A growing minority? *GradPSYCH*. Retrieved from <http://www.apa.org/gradpsych/2011/01/cover-men.aspx>

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